

Makita

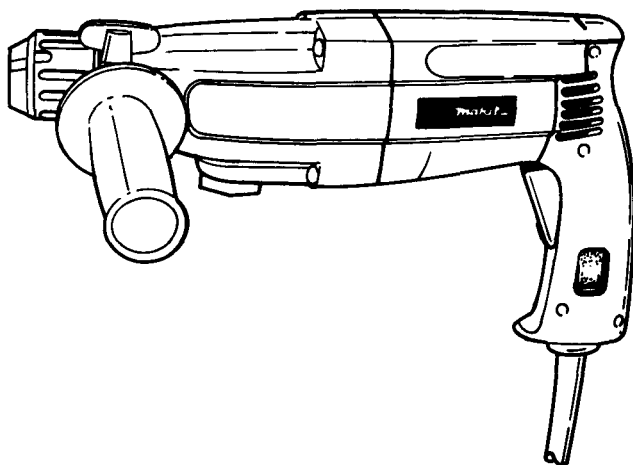
アメリカ

Rotary Hammer

24 mm (15/16") MODEL HR2400

Variable Speed

INSTRUCTION MANUAL



**DOUBLE
INSULATION**

SPECIFICATIONS

Capacities			No load speed (RPM)	Blows per minute	Overall length	Net weight
In concrete	In wood	In steel				
24 mm (15/16")	38 mm (1-1/2") See note 3 below.	13 mm (1/2")	0 - 1,200	0 - 4,200	333 mm (13-1/8")	2.3 kg (5 lbs)

Note 1. Manufacturer reserves the right to change specifications without notice.

2. Specifications may differ from country to country.

3. When using a flat boring bit.

WARNING: For your personal safety, READ and UNDERSTAND before using.

SAVE THESE INSTRUCTIONS FOR FUTURE REFERENCE.

IMPORTANT SAFETY INSTRUCTIONS

(For All Tools)

WARNING: WHEN USING ELECTRIC TOOLS, BASIC SAFETY PRECAUTIONS SHOULD ALWAYS BE FOLLOWED TO REDUCE THE RISK OF FIRE, ELECTRIC SHOCK, AND PERSONAL INJURY, INCLUDING THE FOLLOWING:

READ ALL INSTRUCTIONS.

1. **KEEP WORK AREA CLEAN.** Cluttered areas and benches invite injuries.
2. **CONSIDER WORK AREA ENVIRONMENT.** Don't use power tools in damp or wet locations. Keep work area well lit. Don't expose power tools to rain. Don't use tool in presence of flammable liquids or gases.
3. **KEEP CHILDREN AWAY.** All visitors should be kept away from work area. Don't let visitors contact tool or extension cord.
4. **STORE IDLE TOOLS.** When not in use, tools should be stored in dry, and high or locked-up place — out of reach of children.
5. **DON'T FORCE TOOL.** It will do the job better and safer at the rate for which it was intended.
6. **USE RIGHT TOOL.** Don't force small tool or attachment to do the job of a heavy-duty tool. Don't use tool for purpose not intended.
7. **DRESS PROPERLY.** Don't wear loose clothing or jewelry. They can be caught in moving parts. Rubber gloves and non-skid footwear are recommended when working outdoors. Wear protective hair covering to contain long hair.
8. **USE SAFETY GLASSES.** Also use face or dust mask if cutting operation is dusty.
9. **DON'T ABUSE CORD.** Never carry tool by cord or yank it to disconnect from receptacle. Keep cord from heat, oil, and sharp edges.
10. **SECURE WORK.** Use clamps or a vise to hold work. It's safer than using your hand and it frees both hands to operate tool.
11. **DON'T OVERREACH.** Keep proper footing and balance at all times.
12. **MAINTAIN TOOLS WITH CARE.** Keep tools sharp and clean for better and safer performance. Follow instructions for lubricating and changing accessories. Inspect tool cords periodically and if damaged, have repaired by authorized service facility. Inspect extension cords periodically and replace if damaged. Keep handles dry, clean, and free from oil and grease.
13. **DISCONNECT TOOLS.** When not in use, before servicing, and when changing accessories, such as blades, bits, cutters.

14. **REMOVE ADJUSTING KEYS AND WRENCHES.** Form habit of checking to see that keys and adjusting wrenches are removed from tool before turning it on.
15. **AVOID UNINTENTIONAL STARTING.** Don't carry plugged-in tool with finger on switch. Be sure switch is OFF when plugging in.
16. **OUTDOOR USE EXTENSION CORDS.** When tool is used outdoors, use only extension cords intended for use outdoors and so marked.
17. **STAY ALERT.** Watch what you are doing, use common sense. Don't operate tool when you are tired.
18. **CHECK DAMAGED PARTS.** Before further use of the tool, a guard or other part that is damaged should be carefully checked to determine that it will operate properly and perform its intended function. Check for alignment of moving parts, binding of moving parts, breakage of parts, mounting, and any other conditions that may affect its operation. A guard or other part that is damaged should be properly repaired or replaced by an authorized service center unless otherwise indicated elsewhere in this instruction manual. Have defective switches replaced by authorized service center. Don't use tool if switch does not turn it on and off.
19. **GUARD AGAINST ELECTRIC SHOCK.** Prevent body contact with grounded surfaces. For example; pipes, radiators, ranges, refrigerator enclosures.
20. **REPLACEMENT PARTS.** When servicing, use only identical replacement parts.
21. **POLARIZED PLUGS.** To reduce the risk of electric shock, this equipment has a polarized plug (one blade is wider than the other). This plug will fit in a polarized outlet only one way. If the plug does not fit fully in the outlet, reverse the plug. If it still does not fit, contact a qualified electrician to install the proper outlet. Do not change the plug in any way.

VOLTAGE WARNING: Before connecting the tool to a power source (receptacle, outlet, etc.) be sure the voltage supplied is the same as that specified on the nameplate of the tool. A power source with voltage greater than that specified for the tool can result in **SERIOUS INJURY** to the user — as well as damage to the tool. If in doubt, **DO NOT PLUG IN THE TOOL.** Using a power source with voltage less than the nameplate rating is harmful to the motor.

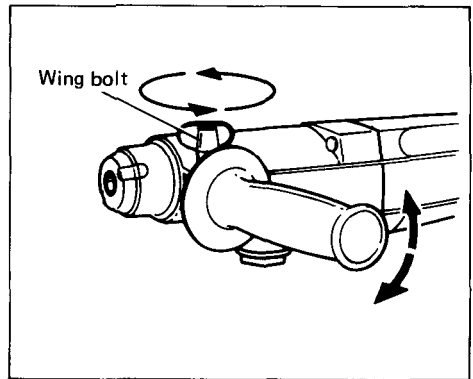
ADDITIONAL SAFETY RULES

1. **Wear a hard hat (safety helmet), safety glasses and/or face shield. It is also highly recommended that you wear a dust mask, ear protectors and thickly padded gloves.**
2. **Be sure the bit is secured in place before operation.**
3. **Under normal operation, the tool is designed to produce vibration. The screws can come loose easily, causing a breakdown or accident. Check tightness of screws carefully before operation.**
4. **In cold weather or when the tool has not been used for a long time, let the tool warm up for several minutes by operating it under no load. This will loosen up the lubrication. Without proper warm-up, hammering operation is difficult.**
5. **Always be sure you have a firm footing.
Be sure no one is below when using the tool in high locations.**
6. **Hold the tool firmly with both hands.**
7. **Keep hands away from moving parts.**
8. **Do not leave the tool running. Operate the tool only when hand-held.**
9. **Do not point the tool at any one in the area when operating. The bit could fly out and injure someone seriously.**
10. **When drilling or chipping into walls, floors or wherever "live" electrical wires may be encountered, DO NOT TOUCH ANY METAL PARTS OF THE TOOL! Hold the tool by the insulated grasping surfaces to prevent electric shock if you drill or chip into a "live" wire.**
11. **Do not touch the bit or parts close to the bit immediately after operation; they may be extremely hot and could burn your skin.**

SAVE THESE INSTRUCTIONS.

Side grip (auxiliary handle)

The side grip swings around to either side, allowing easy handling of the tool in any position. Loosen the wing bolt on the side grip and swing the side grip to the desired position. Then tighten the wing bolt to secure the side grip.

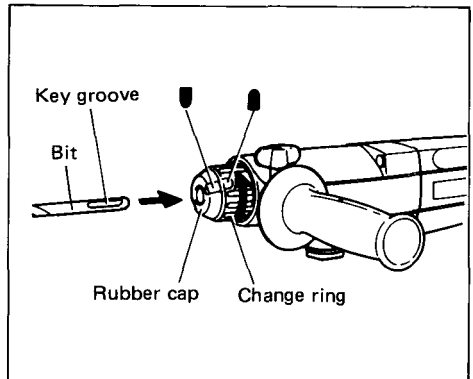


Installing or removing drill bit

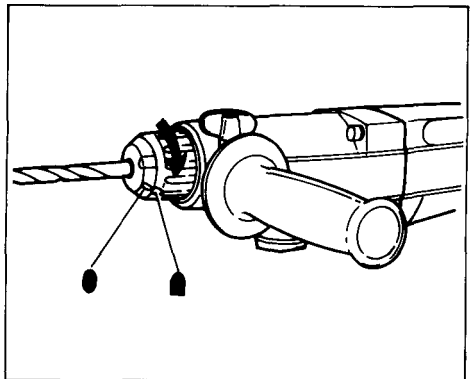
CAUTION:

Always be sure that the tool is switched off and unplugged before installing or removing the bit.

To install the bit, turn the change ring in the direction of the arrow until the ■ mark on the change ring is aligned with the ■ mark on the rubber cap. Align the key groove on the bit shank with the ■ mark on the rubber cap and insert the bit.

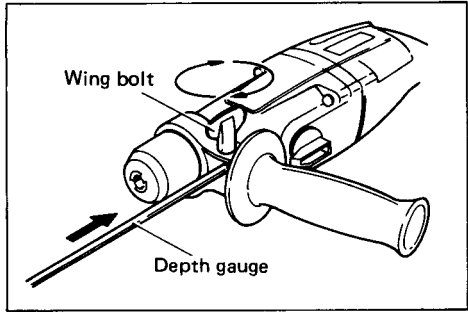


Turn the change ring in the direction of the arrow until the ■ mark on the change ring is aligned with the ■ mark on the rubber cap to secure the bit.



Depth gauge

The depth gauge is convenient for drilling holes of uniform depth. Insert the depth gauge into the hole in the grip. Adjust the depth gauge to the desired depth and then tighten the wing bolt to secure the depth gauge.

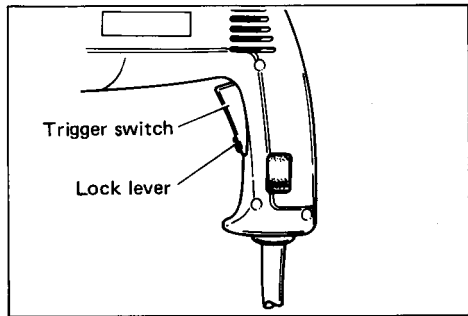


NOTE:

The depth gauge cannot be used at the position where the depth gauge strikes against the gear housing.

Switch action

Tool speed is increased by increasing pressure on the trigger. To start the tool, simply pull the trigger. Release the trigger to stop. For continuous operation, pull the trigger and then slide the lock lever upward. To stop the tool from the locked position, pull the trigger fully, then release it.

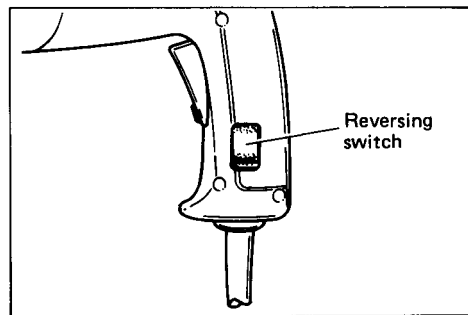


CAUTION:

Before plugging in the tool, always check to see that the trigger switch actuates properly and returns to the "OFF" position when released.

Reversing switch action

This tool has a reversing switch to change the direction of rotation. Press the upper side (FWD side) of the switch for clockwise rotation or the lower side (REV side) of the switch for counterclockwise rotation.

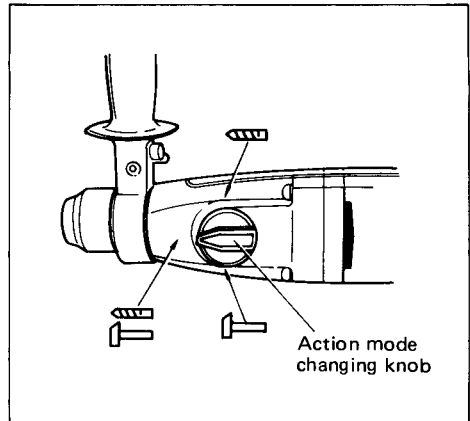


CAUTION:

- Always check the direction of rotation before operation.
- Use the reversing switch only after the tool comes to a complete stop. Changing the direction of rotation before the tool stops may damage the tool.

Selecting action mode

This tool employs an action mode changing knob. Select one of three modes suitable for your work needs by using this knob. For rotation only, turn the knob so that the arrow on the knob points toward the  mark on the tool body. For hammering only, turn the knob so that the arrow on the knob points toward the  mark on the tool body. For rotation with hammering, turn the knob so that the arrow on the knob points toward the  mark on the tool body.



CAUTION:

The action mode changing knob may not be turned to your desired mode mark when the tool is not running. In this case, pull the trigger switch half-way and turn the knob while the tool is running under no load at low speed.

Torque limiter

The torque limiter will actuate when a certain torque level is reached. The motor will disengage from the output shaft. When this happens, the bit will stop turning.

CAUTION:

- As soon as the torque limiter actuates, switch off the tool immediately. This will help prevent premature wear of the tool.
- Hole saws, core bits, diamond core bits, etc. cannot be used with this tool. They tend to pinch or catch easily in the hole. This will cause the torque limiter to actuate too frequently.

Hammer drilling operation

Position the bit at the desired location for the hole, then pull the trigger. Do not force the tool. Light pressure gives best results. Keep the tool in position and prevent it from slipping away from the hole. Do not apply more pressure when the hole becomes clogged with chips or particles. Instead, run the tool at an idle, then remove the bit partially from the hole. By repeating this several times, the hole will be cleaned out and normal drilling may be resumed.

CAUTION:

There is a tremendous and sudden twisting force exerted on the tool/bit at the time of hole breakthrough, when the hole becomes clogged with chips and particles, or when striking reinforcing rods embedded in the concrete. Always use the side grip (auxiliary handle) and firmly hold the tool by both side grip and switch handle during operations. Failure to do so may result in the loss of control of the tool and potentially severe injury.

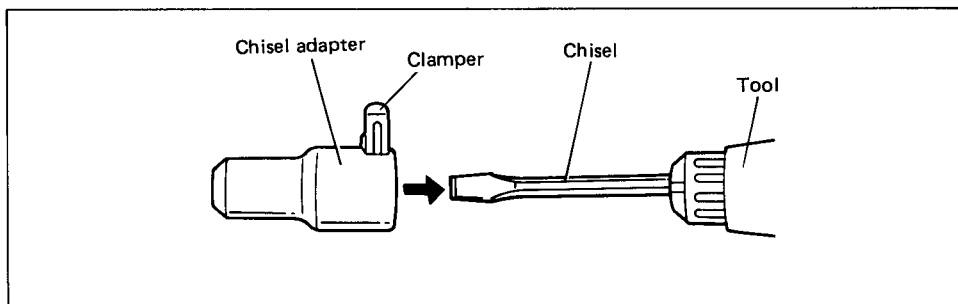
Bit grease

Coat the bit shank head beforehand with a small amount (about 0.5 – 1 g; 0.02 – 0.04 oz.) of bit grease. This chuck lubrication assures smooth action and longer service life.

Using cold chisel or bull point

When using optional cold chisel or bull point, proceed as follows.

1. Unplug the tool.
2. Remove the side grip from the tool.
3. Set the action mode changing knob to "rotation with hammering".
4. Install the chisel on the tool. Refer to "installing or removing drill bit" described on the previous page.
5. Install the chisel adapter (optional accessory) on the tool so that the chisel is inserted through the chisel adapter.



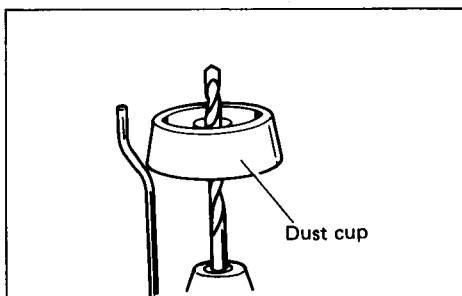
6. Rotate the chisel so that the chisel faces toward the direction suitable for your work. Then secure the chisel and chisel adapter to the tool using the clamper on the chisel adapter.
7. Set the action mode changing knob to "hammering only". Now you can use the chisel.
8. To remove the chisel, follow the installation procedures in reverse.

CAUTION:

Always use "hammering only" action when the chisel adapter is installed on the tool. If you use "rotation with hammering" or "rotation only", a malfunction and damage to the tool will result.

Dust cup

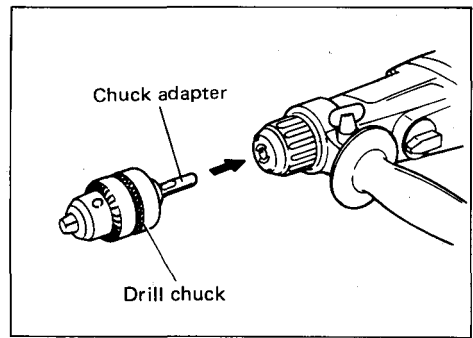
Use the dust cup to prevent dust from falling over the tool and on yourself when performing overhead drilling operations. Attach the dust cup to the bit as shown in the figure. The dust cup can be attached to the bit up to 14.5 mm (9/16") in diameter.



Drilling in wood or metal

Use the optional drill chuck assembly (consisting of drill chuck and chuck adapter assembly). When installing it, refer to "installing or removing drill bit" described on the previous page. Set the action mode changing knob to "rotation only". You can drill up to 13 mm (1/2") diameter in metal and up to 38 mm (1-1/2") diameter in wood.

(Note: When using a flat boring bit.)



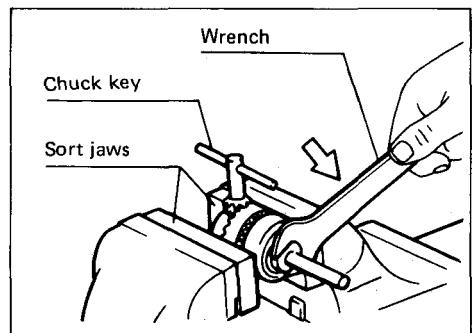
CAUTION:

Never use "rotation with hammering" when the drill chuck assembly is installed on the tool. The drill chuck assembly may be damaged. Also, the drill chuck will come off when reversing the tool.

NOTE:

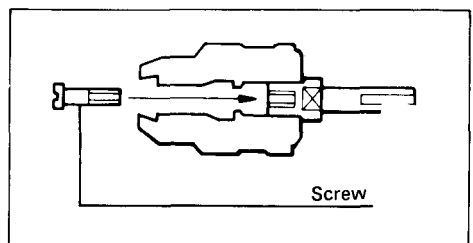
If you need assemble the drill chuck and chuck adapter assembly, proceed as follows.

Secure the drill chuck in a vise or similar securing device. Place the chuck key in one of the three holes so that the chuck body will not turn.



Remove the screw from the chuck adapter assembly and screw the chuck adapter into the drill chuck. Use a wrench to tighten the chuck adapter securely, applying about 300-400 kgf · cm (21.6-28.9 lb · ft) torque. [Note: you can obtain 300-400 kgf · cm (21.6-28.9 lb · ft) torque by applying pressure of 30-40 kg (66-88 lbs) to the wrench while holding the portion 10 cm (4") from the wrench head.]

Open the chuck jaws fully and insert the screw through the chuck opening. Tighten the screw counterclockwise with a screwdriver.



MAINTENANCE

CAUTION:

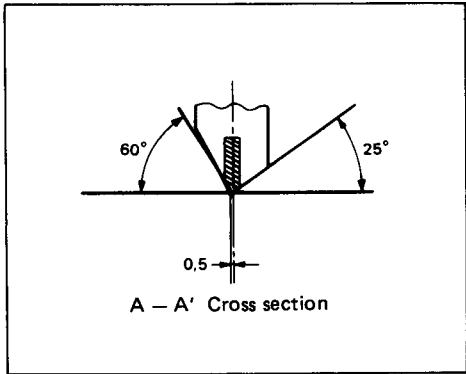
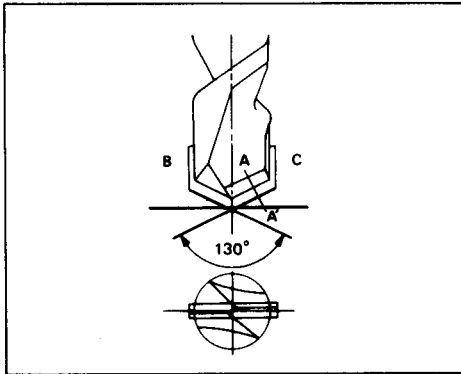
Always be sure that the tool is switched off and unplugged before attempting to perform inspection or maintenance.

Sharpening tungsten-carbide tip bit

When your bit becomes dull, use an ordinary bench grinder with a wheel made of silicon carbide to sharpen it.

CAUTION:

- Be sure to maintain the original angles of the tip. Especially without 60° chamfering, the tungsten-carbide tip may be damaged.
- Do not quench the bit in water or oil.
- Do not grind the sides B and C.



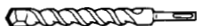
To maintain product SAFETY and RELIABILITY, repairs, carbon brush inspection and replacement, any other maintenance or adjustment should be performed by Makita Authorized or Factory Service Centers, always using Makita replacement parts.

ACCESSORIES

CAUTION:

These accessories or attachments are recommended for use with your Makita tool specified in this manual. The use of any other accessories or attachments might present a risk of injury to persons. The accessories or attachments should be used only in the proper and intended manner.

• Tungsten-carbide tip bits



Part No.	Diameter	Overall length
711142-A	3/16"	4"
711143-A	1/16"	6"
711147-A	1/4"	4"
711148-A	1/4"	6"
711152-A	5/16"	6"
711155-A	3/8"	6"
711156-A	3/8"	12"
711158-A	7/16"	6"
711161-A	1/2"	6"
711162-A	1/2"	12"
711165-A	9/16"	6"
711168-A	5/8"	8"
711169-A	5/8"	12"
711172-A	1 1/16"	8"
711173-A	3/4"	8"
711174-A	3/4"	12"
711176-A	7/8"	8"

• Chuck key S13

Part No. 763411-7



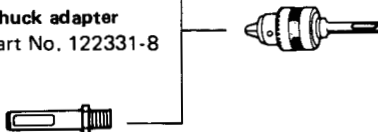
• Drill chuck S13

Part No. 763047-2



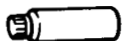
• Chuck adapter

Part No. 122331-8



• Hammer grease 30 g; 1 oz.

Part No. 181490-7



• Depth gauge

Part No. 321144-6



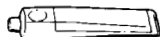
• Safety goggle

Part No. 191686-2



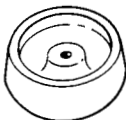
• Bit grease 100 g; 3.5 oz.

Part No. 181573-3



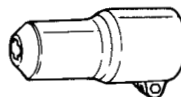
• Dust cup

Part No. 421342-3



• Chisel adapter assembly

Part No. 122460-7



• Steel carrying case

Part No. 181872-3



• Grip assembly

Part No. 134715-8



● **Bull point**

Part No. 798380-3



● **Cold chisel**

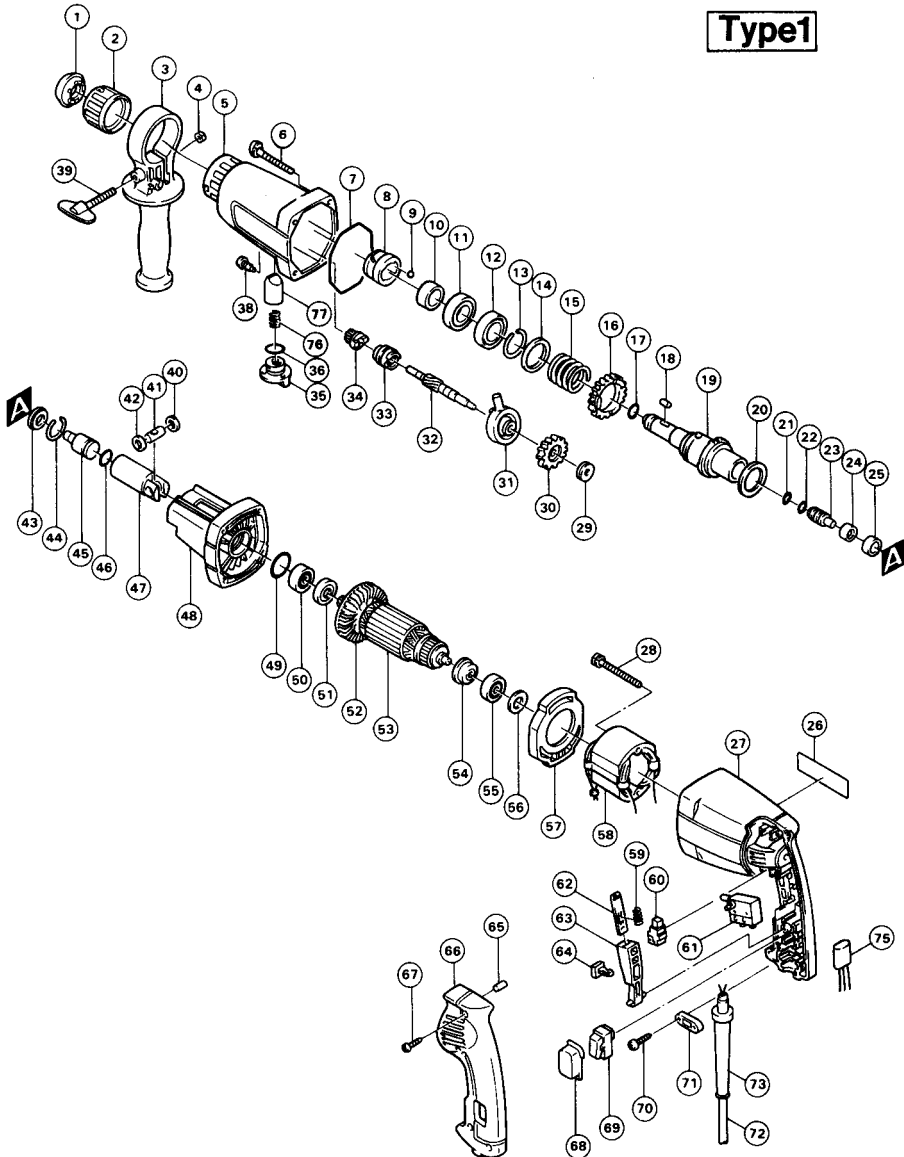
Part No. 798379-8



24 mm (15/16'')

ROTARY HAMMER

Model HR2400

Type1


Note: The switch, noise suppressor and other part configurations may differ from country to country.

ITEM NO.	NO. USED	DESCRIPTION	ITEM NO.	NO. USED	DESCRIPTION
MACHINE			MACHINE		
1	1	Cap 37	40	1	Flat Washer 12
2	1	Change Ring Cover	41	1	Piston Joint
3	1	Grip	42	1	Flat Washer 12
4	1	Hex. Nut M6	43	1	Flat Washer 13.5
5	1	Gear Housing	44	1	Ring Spring 23
6	4	Pan Head Screw M5x50 (With Washer)	45	1	Striker
7	1	O Ring 67	46	1	O Ring 16
8	1	Change Ring	47	1	Piston Cylinder
9	1	Steel Ball 7.1	48	1	Gear Housing Cover
10	1	Ring 20	49	1	O Ring 24
11	1	Ball Bearing 6904LLU	50	1	Ball Bearing 609LLB
12	1	Oil Seal 28	51	1	Oil Seal 12
13	1	Ring Spring 28	52	1	Fan 60
14	1	Flat Washer 31	53	1	ARMATURE ASSEMBLY (With Item 52 - 55)
15	1	Compression Spring 31	54	1	Insulation Washer
16	1	Spur Gear 46	55	1	Ball Bearing 608LLB
17	1	O Ring 10	56	1	Flat Washer 14
18	2	Roller 7	57	1	Baffle Plate
19	1	Tool Holder	58	1	Field
20	2	Flat Washer 29	59	1	Compression Spring 3
21	1	O Ring 10	60	2	Carbon Brush
22	1	O Ring 10	61	1	Switch
23	1	Impact Bolt	62	1	Lock Plate
24	1	Idler	63	1	Switch Lever
25	1	Rubber Ring 17	64	1	Lock Button
26	1	Name Plate	65	2	Rubber Pin 4
27	1	Motor Housing	66	1	Handle Cover
28	2	Hex. Bolt M4x55 (With Washer)	67	6	Tapping Screw 4x18
29	1	Thrust Needle Bearing 819	68	1	Dust Cover
30	1	Helical Gear 31	69	1	Switch
31	1	Swash Bearing 9	70	2	Tapping Screw 4x18
32	1	Cam Shaft	71	1	Strain Relief
33	1	Clutch	72	1	Cord
34	1	Spur Gear 10	73	1	Cord Guard
35	1	Change Lever	76	1	Compression Spring 6
36	1	O Ring 17	77	1	Push Cone
38	1	Pan Head Screw M4			
39	1	Screw 6x40			

Note: The switch and other part specifications may differ from country to country.

MAKITA LIMITED ONE YEAR WARRANTY

Warranty Policy

Every Makita tool is thoroughly inspected and tested before leaving the factory. It is warranted to be free of defects from workmanship and materials for the period of ONE YEAR from the date of original purchase. Should any trouble develop during this one-year period, return the COMPLETE tool, freight prepaid, to one of Makita's Factory or Authorized Service Centers. If inspection shows the trouble is caused by defective workmanship or material, Makita will repair (or at our option, replace) without charge.

This Warranty does not apply where:

- repairs have been made or attempted by others;
- repairs are required because of normal wear and tear;
- The tool has been abused, misused or improperly maintained;
- alterations have been made to the tool.

IN NO EVENT SHALL MAKITA BE LIABLE FOR ANY INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES FROM THE SALE OR USE OF THE PRODUCT. THIS DISCLAIMER APPLIES BOTH DURING AND AFTER THE TERM OF THIS WARRANTY.

MAKITA DISCLAIMS LIABILITY FOR ANY IMPLIED WARRANTIES, INCLUDING IMPLIED WARRANTIES OF "MERCHANTABILITY" AND "FITNESS FOR A SPECIFIC PURPOSE," AFTER THE ONE-YEAR TERM OF THIS WARRANTY.

This Warranty gives you specific legal rights, and you may also have other rights which vary from state to state. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you. Some states do not allow limitation on how long an implied warranty lasts, so the above limitation may not apply to you.

Makita Corporation

3-11-8, Sumiyoshi-cho,
Anjo, Aichi 446 Japan

883824 - 069

PRINTED IN JAPAN
1993 - 6 - N